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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WRIGHT, ANDREW D	

ART UNIT	PAPER NUMBER
3617	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,187	MCCARTHY, PETER T.	
	Examiner	Art Unit	
	Andrew Wright	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,18 and 19* is/are rejected.

7)☒ Claim(s) *16,17 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/16/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement received 10/16/2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. The following foreign references appear to have no relevance to the instant application, and it is requested that applicant explain their relevance: EP 509,764 A1; EP 768,392 A2; SU 1,239,302 A1.

2. Certain US patents listed in the IDS received 10/16/2003 either: have a patent number that does not match the inventor name given, or appear to have no relevance to the instant application. It is requested that applicant explain the relevance of US patents number:

a. US 5,384

b. US 234,305

c. US 476,092

d. US 787,291

e. US 983,967

f. US 2,850,487

g. US 3,776,363

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1-5, 12-15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viale et al. (US 6,364,728) in view of Murdoch (US 3,411,165). Viale shows a propulsion hydrofoil that is used as a swim fin. The fin has a body and blade. The blade has an attacking surface, lee surface, outer edges, root portion, and free end portion as recited in claim 1. A midpoint can be determined between the root and free end, thereby defining a first blade portion closer to the foot (1) and a second blade portion closer to the free end. The blade member has longitudinal channels as shown in figure 1. Viale does not disclose that the blade can form a longitudinal channel shaped contour during the stroke. It is known in the art, as shown by applicant in figures 4-7 of the instant application, that such channels can be used to allow the blade to deform to form a longitudinal channel shaped contour during the power stroke. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Viale such that the channels allow the blade to form a longitudinal channel shaped contour between the sides and along the length of the blade. The motivation would be to enhance the hydrodynamic performance of the fin. The first blade portion has sufficient flexibility to bend along a transverse axis defined by notches (112, 122). The deflection along this axis is limited to a predetermined amount

by the stops (202, 302). The blade member will have some degree of elastic restitution that provides a snap back force to move the blade form the deflected position back to the neutral position. The amount of deformation that results in channel formation will be a product of numerous parameters such as dimensions of the individual channels, thickness and flexibility of the blade material, and force of the kick stroke. It is known to provide a blade that will allow the longitudinal channel shaped contour to develop fully up to the foot portion of the fin, as shown by Murdoch. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Viale by designing the numerous parameters such that the longitudinal channel shaped contour can fully form substantially all the way up to the foot portion as shown by Murdoch. The motivation would be to enhance the hydrodynamic performance of the fin. Viale modified in view of Murdoch does not specifically disclose the recited method steps. But the steps are inherent in the making and use of the modified invention. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to devise the claimed method steps. The motivation would be to make and use the modified invention.

5. Claim 2, Viale shows a stopping device (202, 302).

6. Claim 3, the snapping motion will be a result of at least the above mentioned design parameters. It is within the range of knowledge of the skilled artisan to alter all of the above mentioned parameters. Using the modified invention of Viale in view of Murdoch as a starting point, it would be within the normal range of experimentation to devise a snapping force that reduces at least some portion of lost motion. The

motivation for such experimentation is to enhance the efficiency of the fin by reducing lost motion.

7. Claim 4, Viale discloses that the angle between the stops (202, 302) and the blade surface is between 60° and 80°. Using the 60° angle, deflection from neutral to maximum deflection would be through an angle of 60°. Such deflection would cause the outer surface of the blade opposite the side of bending to elongate more than 2%.

8. Claim 5, such deflection would cause the outer surface of the blade opposite the side of bending to elongate more than 10%.

9. Claim 12, Viale shows two stiffeners (102) near the outer edges. Each stiffener has at least one notch (112).

10. Claim 13, Viale discloses the material as an elastomeric material. The material will necessarily have a modulus of elasticity that is "significantly high" compared to something else such as hardened steel. It is well known and common to make fin elements from thermoplastic materials.

11. Claims 18 and 19, the notch is near the root and the base.

12. Claim 14, Viale shows stiffeners on either outer side. Each has an upper portion and a lower portion and an upper notch and a lower notch. Figure 2 shows that the ratio of the upper notch length to upper notch depth is at least 3 to 1.

13. Claim 15, figure 2 of Viale shows that the ratio of the upper notch length to upper notch depth is at least 4 to 1.

14. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viale in view of Murdoch as applied to claim 1 above, and further in view of Cousteau et al.

(US 3,082,442). Viale in view of Murdoch does not show a region of reduced material in the blade. Cousteau shows a fin similar to Viale in that it has notches to allow for easier flexing at a predetermined location closer to the foot than to the free end. Cousteau teaches that regions of reduce material (5) can be utilized to enhance the bending in the region (column 2, lines 33-35). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Viale by adding perforations as shown by Cousteau. The motivation would be to enhance the bending in the region near the base. Regarding claim 7, a perforation is a region where the material thickness is reduced to zero. Regarding claim 8, the perforation is a gap with a longitudinal dimension.

15. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viale in view of Murdoch as applied to claim 1 above, and further in view of Vilarrubis (US 3,913,158). Viale in view of Murdoch does not show a plurality of stiffening members staggered along the blade. Vilarrubis shows stiffeners (21) staggered along the blade. Vilarrubis teaches the motivation of helping the swimmer orient the fins correctly (column 2, lines 10-16). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Viale by adding staggered stiffeners as taught by Murdoch. Regarding claims 9 and 11, the stiffeners are angled at their front and rear ends with respect to the lengthwise axis. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of

performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Allowable Subject Matter

16. Claims 16, 17, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number (703) 308-6841. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at (703) 308-0230. The fax number for official communications is 703-872-9306. The fax number directly to the examiner for unofficial communications is 703-746-3548.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1113.

Andrew D. Wright
Patent Examiner
Art Unit 3617

5/14/04